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ABSTRACT

This project developed a conceptualization of higher order thinking, dimensions of classroom thoughtfulness, and an assessment exercise applicable to diverse topics taught in more than 70 classes in 11 high schools. Generic qualities of classroom thoughtfulness were not generally associated with the persuasiveness of student writing on a constitutional issue. The impact of classroom thoughtfulness on higher order thinking in subjects that teachers actually taught was not assessed. The study illustrates issues in devising observation schemes and assessment tasks that at once honor diverse forms of domain-specific competence in social studies, but that also yield common indicators of teaching quality and student performance. A 38-item list of references is included as are a number of tables of statistical data. (Author)

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Classroom Thoughtfulness and Students' Higher Order Thinking: Common Indicators and Diverse Social Studies Courses

Fred M. Newmann

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Abstract

This project developed a conceptualization of higher order thinking, dimensions of classroom thoughtfulness, and an assessment exercise applicable to diverse topics taught in more than 70 classes in 11 high schools. Generic qualities of classroom thoughtfulness were not generally associated with the persuasiveness of student writing on a constitutional issue. But the impact of classroom thoughtfulness on higher order thinking in subjects that teachers actually taught was not assessed. The study illustrates issues in devising observation schemes and assessment tasks that at once honor diverse forms of domain-specific competence in social studies, but that also yield common indicators of teaching quality and student performance.

Secondary school social studies varies considerably between schools, between courses within schools, and between sections of the same course within a school. The diversity is nourished by the pluralistic content of the curriculum -- which includes disciplines of history, geography, political science, economics, sociology, psychology, anthropology, many specialties within these disciplines and a host of areas beyond formal academic disciplines considered legitimate areas of study (e.g., ethnic and women's studies, global education, environmental studies, multicultural studies, law-related education). Teachers' efforts to shape content to the diverse abilities and interests of students further differentiates instruction. Finally, the varied political interests of teachers and local communities make the selection of content even more controversial and non-uniform. Yet, in spite of the diversity, educators often agree that, regardless of the content studied, a major purpose of social studies instruction should be to help students think critically and creatively about the subject and that careful, disciplined thinking should eventually be applied to public issues that confront citizens in a democracy.

In the midst of disparity among specific instructional goals, how might we assess progress on the more general goal of promoting students' thinking? Some common indicators are needed to respond to the growing demand for school, district, state and national accountability. Common indicators could reveal not only the general qualities of student thinking, but also provide information to identify inequities in instruction and opportunity to learn. Common indicators for both instructional quality and student thinking might help to unify the profession around some goals, while, at the same, preserving diversity in the teaching of more specific content. Diversity in specific content between classes, schools, districts and states is consistently advocated to respond to students' personal backgrounds, to support cultural pluralism, to foster teacher commitment and creativity, and to adequately represent the many disciplines of the social studies field.

In the study reported here, we addressed this problem by identifying "generic" qualities of classroom thoughtfulness that could be expected to promote students' thinking across a wide range of social studies courses. We also developed a test for assessing the quality of student thought on public issues which did not depend upon students' prior mastery of specific content. Elsewhere we have reported more extensively our conception of thinking and the rationale for the assessment of classroom thoughtfulness (Newmann, 1990a), the development and scoring of the test (Newmann, 1990c), and several other aspects of the study.[1] Following a review of this material, the focus here will be on the relationship of classroom thoughtfulness to students' higher order thinking as assessed by the test.

I. What is Higher Order Thinking?

Researchers and educators have advocated many conceptions of thinking: critical thinking, divergent or creative thinking, reasoning (moral, practical, deductive, inductive), problem-solving, decision-making. These can all be subsumed under a more general distinction between higher order and lower order thinking. Higher order thinking is defined broadly as challenge and expanded use of the mind; lower order thinking represents routine, mechanistic application, and limited use of the mind. Challenge or expanded use of mind occurs when a person must interpret, analyze, or manipulate information, because a question to be answered or a problem to be solved cannot be resolved through the routine application of previously learned knowledge. In contrast, "lower order" thinking generally involves repetitive routines such as listing information previously memorized, inserting numbers into previously learned formulae, or applying the rules for footnote format in a research paper.

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[1]Topics covered include teachers' thinking (Onosko, 1989, 1990); principal and departmental leadership (McCarthy & Schrag, in press; King, 1991); student engagement and cognitive challenge (Stevenson, in press; Newmann, in press b); organizational features (Ladwig, 1991); empirical profiles of classroom thoughtfulness (Newmann, 1990b); and general summaries of the project (Newmann, in press a and b).

Challenging problems can appear in many forms in all curriculum subjects. They may lead to single, correct, and well-defined answers or to multiple, ambiguous, conflicting solutions. The challenges may involve different kinds of inquiry (logical, empirical, aesthetic, ethical), different forms of expression (oral, written, non-verbal), different types of intelligence (verbal, mathematical, kinesthetic, interpersonal).

No particular question or problem, however, necessarily leads to higher order thinking for all students. For one person, trying to understand and follow a bus schedule may require higher order thought, but for another, the same task may be routine. In this sense, higher order thinking is relative: to determine the extent to which an individual is involved in higher order thinking, one would presumably need to know much about the person's history. Furthermore, to assess the extent to which an individual is participating in the analysis, interpretation, and manipulation of information, one would want to "get inside" the person's head or experience his/her subjective state of thought.

This definition poses an operational problem. It is difficult to determine the extent to which a person is involved in higher order thinking, and difficult also to judge the quality of that thinking. Teachers who interact with several students at once have little opportunity to diagnose students' individual mental states. Instead, they must make assumptions about the prior knowledge of groups of students and about the kinds of mental work that particular tasks are likely to stimulate. The teaching of thinking, therefore, is a rather imprecise enterprise. The best we can do is to engage students in what we anticipate will be challenging problems, to guide their manipulation of information to solve them, and to support their efforts.

But this conception of higher order thinking has several positive features.

(1) Any person, young or old, regardless of experience, can participate in higher order thought. Students will differ in the kinds of challenges they are able to master, but all are capable of confronting a challenge in the interpretation, analysis, and manipulation of their knowledge.

(2) It encompasses problem-solving in a wide range of school subjects, as well as in non-academic areas.

(3) Using this conception does not require acceptance of any particular theory of cognitive processing or a particular pedagogy. This is an advantage, because solid knowledge on the best techniques for the promotion of thinking does not exist. The effectiveness of technique will probably depend on the nature of the mental challenges presented and characteristics of the students exposed to them. Furthermore, this conception is hospitable to providing students with three resources recognized widely in the literature as important: content knowledge, intellectual skills, and dispositions of thoughtfulness.

Merely presenting students with higher order challenges will not necessarily help them develop the competence to meet the challenges successfully. Research on the nature of thinking (e.g. as summarized by Walsh and Paul, 1987) indicates that for students to cope successfully with higher order challenges, they need a combination of in-depth knowledge, intellectual skills, and attitudes or dispositions of thoughtfulness. Building upon my previous review of literature (Newmann, 1990a) I summarize here key arguments that can be made for each of these critical resources.

The Knowledge Argument. Consider a teacher trying to help students answer the question, "Were the American colonists justified in using violence to secure their independence from England?" Regardless of what side the student takes, a successful response depends on in-depth knowledge and conceptual understanding of the circumstances

of colonial life under British rule, colonial grievances and British responses, principled arguments dealing with inalienable rights, taxation without representation, and ethical reasoning related to the destruction of property and the taking of human life. Beyond substantive knowledge about the historical period, students will need analytic knowledge, for example about elements of a well-reasoned argument, distinctions between empirical and normative issues, and criteria for judging the reliability of evidence. Metacognitive knowledge may also be important, such as having a systematic approach for organizing one's thinking or an awareness of how one's thought processes and perceptions of others - in the heat of discussion - might lead to error. Effective applications of these forms of knowledge are sometimes labeled skills or dispositions, but since these all can be represented as cognitive beliefs, they suggest that knowledge itself is the most critical foundation of understanding.[2]

The Skills Argument. Knowledge is undoubtedly important, but for the purposes of the teaching of thinking, skills are critical because they are the tools that permit knowledge to be applied to the solution of new problems. Some skills may be specific to the domain under study, and others more generic. To address the problem above intelligently, for example, one must be able to detect bias in the documents of colonial history and logical fallacies in inferences and arguments over the justification of the American revolution. One must be able to distinguish relevant from irrelevant information, to anticipate and to respond to arguments in opposition to one's own, to state one's views clearly and persuasively. Skills themselves may be construed or labeled in a variety of ways, but the main point is to recognize their role as cognitive processes through which knowledge is put to work. In practice, knowledge is usually only transmitted from teacher to student without expecting the

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[2]Various arguments for the centrality of knowledge to reasoning have been made by Glaser (1984), McPeck (1981), and Nickerson (1988).

student to manipulate the knowledge to solve higher order challenges. Unless the processes of using knowledge, i.e., skills, are stressed, higher order thinking is likely to be neglected and the knowledge transmitted to remain inert. Perhaps for this reason many educational reformers prefer not to advocate the teaching of thinking, but instead the teaching of thinking skills.[3]

The Dispositions Argument. Without dispositions of thoughtfulness, neither knowledge nor the tools for applying it are likely to be used intelligently. If raising questions about the justification of the war for American independence threatens patriotic feelings, this could jeopardize dispassionate inquiry. Some people may avoid almost any argument to protect themselves from uncomfortable feelings of conflict. Those who emphasize the importance of dispositions suggest several crucial traits: a persistent desire that claims be supported by reasons (and that the reasons themselves be scrutinized); a tendency to be reflective -- to take time to think problems through for oneself, rather than acting impulsively or automatically accepting the views of others; a curiosity to explore new questions; and the flexibility to entertain alternative and original solutions to problems. Thoughtfulness thereby involves attitudes, personality or character traits, and general values and beliefs or epistemologies about the nature of knowledge (e.g., that rationality is desirable; that knowledge itself is socially constructed, subject to revision, and often indeterminate; and that thinking can lead to the understanding and solution of problems). Without dispositions of thoughtfulness, knowledge and skills are likely to be taught and applied mechanistically and nonsensically. Of the three main resources, dispositions have attracted the least attention in professional literature, but a good argument can be made that dispositions are central. They

[3]Various arguments for skills as the most central resource in thinking have been made by Beyer (1987), deBono (1983), Herrnstein et al. (1986), Marzano et al. (1988).

seem to establish both the will to think and to cultivate ineffable qualities of judgment that steer knowledge and skills in productive directions.[4]

It is important that teachers design instruction explicitly to help students acquire and to use in-depth knowledge, skills and dispositions of thoughtfulness to solve higher order challenges. It is not possible to establish a defensible hierarchy among the three resources, but all three are needed. The observation scheme to be presented next is an attempt to capture teachers' efforts to develop knowledge, skills and dispositions, without giving center stage to any one resource, and also to refrain from prescribing the precise kinds of knowledge, skills and dispositions that should be promoted for the teaching of each subject.[5] The reasoning behind this choice is explained in the next section that presents the framework for assessing classroom thoughtfulness.

II. Developing Indicators of Classroom Thoughtfulness

What kinds of indicators would provide information on the extent to which higher order thinking was promoted in classes studying a variety of social studies subjects. Because it was logistically impossible to examine the actual thinking of individual students during the lessons, a more general tool was needed for describing higher order thinking in the lesson as a whole. But how specific should the criteria be?

Interviews with history and social studies teachers indicated that highly specific lists of knowledge, skills and dispositions would be unlikely to facilitate widespread consensus. Instead, social studies teachers are likely to support a plurality of types of thinking, but even

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[4]Various arguments for dispositions as a central resource in thinking have been made by Cornbleth (1985), Dewey (1933), and Schrag (1988).

[5]Those who emphasize interaction and interdependence among these resources include Bransford et al (1986), Ennis (1987), Greeno (1989), Perkins and Salomon (1989), and Walsh and Paul (1987).

these will be grounded primarily in the teaching of different subjects. Thus, a broad conception of thinking, adaptable to a variety of content and skill objectives, is more likely to interest a diverse population of high school teachers.

Rather than translating thinking into specific knowledge problems, skills and attitudes for students, the project staff began by asking what observable qualities of classroom activity would be most likely to help students achieve depth of understanding, intellectual skills, and dispositions of thoughtfulness. Thus, we moved from a consideration of the nature of thinking in individual students to the promoting thoughtfulness in classrooms. Thoughtfulness includes both presenting students with higher order challenges and helping them apply knowledge, skills and dispositions to solve them. Emphasizing general qualities of classroom talk and activity rather than highly differentiated behaviors helps to avoid fragmentation in teaching which itself can undermine student thinking. A more general approach may also hold more promise both for students to solve new problems and for teachers to promote thinking across diverse lessons.

A broad set of criteria can strike at the heart of an underlying malady identified in many studies. At best, much classroom activity fails to challenge students to use their minds in any valuable ways; at worst, much classroom activity is nonsensical or mindless. The more serious problem, therefore, is not the failure to teach some specific aspect of thinking, but the profound absence of thoughtfulness in classrooms. Even programs designed to teach thinking skills can fail to promote thoughtfulness. Our general conception of thinking can be used to address this basic issue. Ultimately, of course, teachers must focus on the content-specific activities that enhance understanding of their subjects, but the point here is to arrive at a general framework through which classroom behavior can be interpreted as promoting or undermining higher order thinking.

In devising indicators of classroom thoughtfulness responsive to the points above, we initially rated lessons on 15 possible dimensions of classroom thoughtfulness summarized in Table 1. Each was used to make an overall rating of an observed lesson on a 5-point scale from 1 = "a very inaccurate" to 5 = "a very accurate" description of this lesson. After observing these qualities in 160 lessons in five "select" social studies departments and further examining them from a theoretical point of view, we chose the six main dimensions described below as most fundamental.[6]

1. *There was sustained examination of a few topics rather than superficial coverage of many.*

Mastery of higher order challenges requires in-depth study and sustained concentration on a limited number of topics or questions. Lessons that cover a large number of topics give students only a vague familiarity or awareness and, thereby, reduce the possibilities for building the complex knowledge, skills, and dispositions required to understand a topic.

2. *The lesson displayed substantive coherence and continuity.*

Intelligent progress on higher order challenges demands systematic inquiry building on relevant and accurate substantive knowledge in the field and working toward the logical development and integration of ideas. In contrast, lessons that teach material as unrelated fragments of knowledge, without pulling them together, undermine such inquiry.

3. *Students were given an appropriate amount of time to think, that is, to prepare responses to questions.*

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[6]The development of these indicators and selection of the six most critical are described more fully in Newmann (1990a; 1990b). See also Schrag (1989).

Thinking takes time, but often recitation, discussion, and written assignments pressure students to make responses before they have had enough time to reflect. Promoting thoughtfulness, therefore, requires periods of silence during which students can ponder the validity of alternative responses, develop more elaborate reasoning, and experience patient reflection.

4. *The teacher asked challenging questions and/or structured challenging tasks (given the ability level and preparation of the students).*

By our definition higher order thinking occurs only when students are faced with questions or tasks that demand analysis, interpretation, or manipulation of information; that is, non-routine mental work. In short, students must be faced with the challenge of how to use prior knowledge to gain new knowledge, rather than the task of merely retrieving prior knowledge.

5. *The teacher was a model of thoughtfulness.*

To help students succeed with higher order challenges, teachers themselves must model thoughtful dispositions as they teach. Of course, a thoughtful teacher would demonstrate many of the behaviors described above, but this dimension is intended to capture a cluster of dispositions likely to be found in any thoughtful person. Key indicators include showing interest in students' ideas and in alternative approaches to problems; showing how he/she thought through a problem (rather than only the final answer); and acknowledging the difficulty of gaining a definitive understanding of problematic topics.

6. *Students offered explanations and reasons for their conclusions.*

The answers or solutions to higher order challenges are rarely self-evident. Their validity often rests on the quality of explanation or reasons given to support them.

Therefore, beyond offering answers, students must also be helped to produce explanations and reasons to support their conclusions.

The six dimensions were combined into a single scale indicator of classroom thoughtfulness for an observed lesson.[7] To estimate inter-rater reliability, 87 lessons in 16 high schools were observed independently by different pairs of raters drawn from a team of six researchers. Considering the six dimensions in the classroom thoughtfulness scale, each scored from 1 to 5, the overall correlation between two observers was .76. The raters agreed on 64% of the ratings, and they differed by one point or less on 96% of the ratings.

III. Testing Thinking

What kind of test or exercise would give a meaningful indicator of the quality of students' thinking in social studies? Ideally, one would want assessment tasks that posed novel challenges in understanding the specific subjects studied in each of the observed classes. Because of the diversity of topics and teachers' goals, these tests would vary considerably in the nature of in-depth knowledge required to solve the problem, the kinds of skills needed, and possibly also the underlying dispositions. To compare the performances of students in different classes, it would be necessary to develop common standards on which to evaluate the diverse tests. Unfortunately, our project lacked the resources to undertake this complicated approach to assessment.

Another alternative was to administer a previously developed test of critical thinking, such as those reviewed by Arter and Salmon (1987). We rejected this on the grounds that such tests, which focus primarily on students' logical-deductive skills and which are usually answered in multiple-choice form, do not reveal the depth of students' understanding of any

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[7]Items on the scale have a reasonably high level of internal consistency (Cronbach alpha = .82). Exploratory factor analysis and LISREL modeling also grouped these dimensions into a distinct construct of thoughtfulness (Newmann, 1990b).

particular topic and they do not show how students organize their thoughts in their own language.[8]

Our research indicates that when social studies teachers want to promote thinking, their aim is not usually to teach and test for discrete thinking skills, such as hypothesis testing or evaluating the reliability of sources. Instead, they design their daily efforts to fulfill a more general vision -- leading students to interpret, analyze, and use their knowledge of history, government, geography and the social sciences to understand the contemporary world.

The Posttest: Persuasive Writing on a Constitutional Issue. We devised an exercise consistent with this general purpose, not aimed at the specific content taught in any class. Students were given a two-page document (see Appendix) that described a hypothetical court case, based on an actual case, involving the search of Karen Doctor's purse and locker by the high school assistant principal who suspected Karen first of smoking in violation of a school rule and then of selling marijuana. Following the case description, background information was given on the main principles that courts have used in making decisions about the constitutionality of student searches. Students were asked to decide whether Karen's constitutional rights were violated and to write a persuasive essay which explained and defended their views using information in the reading.

Completing the task requires higher order thinking, because to succeed, students must organize and interpret information in a new way (assuming they have not previously studied this issue). Virtually all of the substantive knowledge needed is available within the document. This is not a test of what students have remembered from social studies, but a test of their competence in thinking about social studies content. As explained below, an

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[8]See Norris (1989) for further discussion of this point.

analogous task, the case of Anthony and Stanton involving school censorship of a student newspaper, was used as a pretest in one of the data sets.

There are, of course, a variety of important ways to think about social studies content that this test does not attempt to assess -- for example, explaining historical causation, analyzing cultural differences, interpreting economic data, solving moral dilemmas, or critiquing the use of political power. Social studies assessment should give serious attention to all of these forms of thinking. Our test is limited to the kind of thinking involved in writing a persuasive position on a constitutional issue. This should not, however, be seen as an esoteric or highly specialized facet of social studies. To the contrary, it was chosen because it represents a central civic competence and an important objective of social studies.

According to the research design described later, the test was administered toward the end of the spring semester, and students had about 50 minutes to complete it. Almost all students finished with time to spare.

Scoring. Students' essays were scored from 1 to 5, based on the following criteria which we adapted from the NAEP assessment of persuasive writing (Applebee, Langer, Mullis, & Jenkins, 1990). Essays received one of five scores: (1) unsatisfactory, (2) minimal, (3) adequate, (4) elaborated, or (5) exemplary. The overarching consideration was the degree to which a student's response was capable of persuading a reader. Three elements focused the assessment: whether or not the student had a) taken an informed stand, b) provided persuasive reasons, and c) elaborated upon those reasons. Specific points were not subtracted for unpersuasive or irrelevant reasons but these could diminish persuasiveness. Presentation of faulty assumptions or reasons that undermine the argument could also diminish overall persuasiveness. Finally, responses were to be written in sentences; that is, incomplete sentences or fragmented lists were considered less persuasive. Fuller descriptions for each

of the scores are given below. Examples of responses for each are given in Newmann (1990c) which gives more detail on development and scoring of the test.

1. Unsatisfactory: The student has failed to take a stand on the issue under examination, or has taken a stand but has failed to provide a single persuasive reason. Lacking a persuasive reason, unsatisfactory responses will necessarily lack elaboration. Overall, the response has no chance of persuading the reader.

2. Minimal: The student has taken a stand on the issue under examination and has provided at least one persuasive reason, or at least two supportive reasons. Faulty assumptions, undermining, or irrelevant reasons could result in an unsatisfactory score if they reduce the persuasiveness of the argument. Overall, the response is unlikely to persuade the reader.

3. Adequate: The student has taken a stand and has provided two or more persuasive reasons. Elaboration of reasons is not necessary here. The presentation of only one persuasive reason can result in a score of "adequate" if useful elaboration is included. Undermining reasons, faulty assumptions, or irrelevant reasons can possibly reduce the score to "minimal". Overall, the response has a chance of persuading the reader.

4. Elaborated: The student has taken a stand, has provided two or more persuasive reasons, and has provided elaboration on at least one of those reasons. Presentation of many persuasive reasons (at least 3) without elaboration can also produce this score. Undermining reasons, faulty assumptions, or irrelevant reasons can possibly reduce the score. Overall, the response is likely to persuade the reader.

5. Exemplary: The student's response meets criteria for (4) above, and demonstrates (a) at least two elaborated persuasive reasons, and (b) an argument so clear and coherent (i.e., no significant undermining reasons, faulty assumptions or irrelevant reasons) and

grammatically correct as to merit public display as an outstanding accomplishment for a high school student. Overall, the response is more likely to persuade the reader.

To apply the criteria, several additional scoring conventions were developed to clarify what counts as a persuasive reason and what substantive principles in the case are considered relevant to the argument for each side.

To determine inter-rater agreement, different pairs of two raters read 492 tests (375 posttests, 117 pretests) which amounted to about 29% of the tests completed. The overall correlation between ratings was .80. Raters achieved exact agreement in 65% of the cases and agreed exactly or missed by only one point in 98% of the cases.[9]

IV. Design

This study was part of a larger project to investigate how high school social studies departments might promote higher order thinking more successfully (see Newmann, in press a and b). The strategy was to study social studies departments that varied in department-wide efforts to emphasize higher order thinking, and then, by comparing these, to draw inferences about barriers and opportunities for success. Between the fall of 1986 and the spring of 1990, the project conducted almost 500 observations of lessons, and in-depth interviews with 56 teachers, the social studies department chairs and the principals in 16 demographically diverse high schools.

Through national searches which involved nominations, phone interviews, and site visits, we identified three different sets of social studies departments: (a) those that placed special emphasis on higher order thinking, but organized instruction according to familiar patterns in the comprehensive high school (henceforth, the five "select" departments); (b)

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[9]These rates of agreement are consistent with, but slightly lower than those achieved in NAEP scoring of persuasive writing. This was to be expected, because our scoring required more complicated judgements about students' use of subject matter.

those that made no special department-wide efforts toward higher order thinking and were also conventionally organized (henceforth, the seven "representative" departments); (c) those that involved a departmental emphasis on higher order thinking and, in addition, had made significant changes in the organization of instruction (henceforth the four "restructured" departments). Initial evidence of departmental emphasis on higher order thinking was drawn from statements of the department chair, examination of course syllabi, and classroom observations and staff interviews completed in a one-day, two-person site visit.

Because we sought an estimate of the highest levels of classroom thoughtfulness, we concentrated on those teachers in each department who were identified by the department chair as most likely to emphasize higher order thinking. We also sought evidence that opportunities for thoughtfulness were available to all students, not only the high achievers. The department chair at each school selected three main courses, taught by different teachers, to be observed at least four times over the school year. The three classes were to illustrate as much higher order thinking as possible, but they were to include (a) a class with a substantial proportion of lower and middle achieving students; (b) a history course with a diverse range of students; and (c) any other class that best illustrated an emphasis on higher order thinking (the students in these were usually high achievers). Quantitative analyses were based upon four lesson observations from each of the classes in which students were tested.

Due to limited funding for the project, it was not possible to administer pre and post tests of higher order thinking to students in all classes in the 16 schools. Instead, the assessment of student achievement was conducted in stages. There was no assessment of student achievement in the first phase investigation of the five select departments. During the second phase study of seven representative departments we used the posttest described in section III, but no comparable pretest. Thanks to collaboration with other researchers in

Phase II, we had access to two tests for ninth graders administered in the fall that could serve as controls for students' writing competence and social studies knowledge at entry. The first was a short answer test of social studies knowledge consisting of multiple-choice and short-answer items drawn from earlier NAEP tests in social studies. For the second, students wrote an essay (in 15 minutes) about a place or a possession that was important to them and instructed to describe it "as fully as you can and explain why it is important to you." Since neither of these required students to write persuasively about constitutional issues, they can be considered "weak" pretests. In the Phase III study of restructured departments we administered a far more rigorous pretest in the fall. Similar in form to the posttest, this pretest was a written exercise that asked students to persuasively defend their position on a constitutional issue that involved a school principal's censorship of an article in a student newspaper. The structure of the exercise was identical to the Karen Doctor case that was given as the posttest.

To examine the relationship between classroom thoughtfulness and students' persuasive writing on constitutional issues, we consider three different data sets. Data Set 1 consists of all students in Phases II and III, without considering any pretest data. Data Set 2 consists of the ninth graders in Phase II who took the "weak" pretests on social studies knowledge and writing. Data Set 3 consists of all students in Phase III who took the "strong" pretest on constitutional reasoning.

V. Results

The central question is the extent to which classroom thoughtfulness (when measured by generic indicators) is associated with students' higher order thinking (when measured by their persuasive writing about a constitutional issue). Before examining the findings, note that the design of the study worked <u>against</u> the discovery of a strong relationship between the

dependent and independent variable. Performance on the posttest would seem to be maximized by instruction related directly to the test, but none of the teachers concentrated on the teaching of persuasive writing or on the understanding of constitutional reasoning. Instead, instruction concentrated on topics typically pursued in the diverse courses observed, such as US History, World History, Politics, Sociology, Economics and others. Furthermore, the independent variable of classroom thoughtfulness did not assess the quality of instruction for the specific competencies of persuasive writing or constitutional understanding.

A posttest on student thinking related to teachers' specific content goals would have been preferred. This would allow one to test the more useful hypothesis that increased classroom thoughtfulness in the teaching of a topic, as assessed by common indicators, will enhance student performance in higher order thinking on that topic. As explained earlier, it was not possible to develop an assessment exercise responsive to each teacher's content goals. We were aware of the odds against finding a strong association between the generic qualities of thoughtfulness we observed and the more specific competencies required for success on the posttest chosen for this study, but we were hopeful nevertheless.

The results are presented in Tables 2 - 4. The means and standard deviations of Data Set 1 (the full sample of students) in Table 2 indicate that performance on the higher order thinking task (Posttest Constitutional Reasoning) was barely minimal. Most students (66%) were given scores of 1 or 2; only 11% scores of 4, 1% scores of 5. This confirms previous reports of low levels of student competence in writing about complex problems.[10] Levels

[10]In Data Set 3, pretest and postest means were virtually identical. Assuming that the tests were of equal difficulty, this indicated no overall improvement in performance over the academic year. The assumption of equal difficulty was confirmed through a separate study in which the tests were randomly assigned at the same point in time to two groups of students (N=106), grades 9-12 from three high schools. While the means were somewhat higher than in Data Set 3, there was no difference in the means of the groups that took each test (posttest =2.43, pretest =2.44).

of Class Thoughtfulness also tended toward the lower end of the 5-point scale, with most students (72%) experiencing classes that scored below 3.5. This finding is consistent with other studies that have found low levels of cognitive work in high school classrooms. It is particularly disturbing in this study in which teachers most likely to promote higher order thinking were deliberately sampled.

Mean values for the student background variables (sex, minority status, parent's education) were close to national norms. Students' grade point averages and the ability level of the classes clustered in the mid-range. The grade level of students (teacher-reported class average rather than student self-report) tended toward the lower levels, because of the large number of ninth graders in the Phase II data set.

The correlations of most interest in Table 3 are those associated with Posttest Constitutional Reasoning and Class Thoughtfulness. As expected, the posttest scores were most strongly related with the strong pretest, the pretest of social studies knowledge, the ability level of the class, and student grade point average. Students in the upper grades were more likely to do well on the posttest, and those in classes with higher percentages of African Americans were likely to do worse. The posttest correlated .37 with class thoughtfulness, but so did the pretest. These results suggest the possibility that instruction reflects students' initial achievement rather than influencing it.

In other reports of this research we delve deeper into the possible determinants of classroom thoughtfulness, by considering differences in thoughtfulness among teachers and schools and how these differences can be explained by characteristics of the teachers, the leadership and the organizations.[11] But correlations here indicate what might be expected;

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[11]See Ladwig (1991), King (1991), Newmann (1990b, in press a), Onosko (1989, 1990, 1991).

namely, that thoughtfulness is higher in classes with older students (i.e., higher grade levels), in classes with larger percentages of higher achieving students, and in classes with students who perform better on the pretests.

Possible explanations for the correlations with classroom thoughtfulness are that teachers' expectations for student performance influence the degree to which they promote higher order thinking, that teacher expectations are determined largely by their assumptions about student ability, and that these expectations are influenced by students' age and prior school achievement. Expectations based on these assumptions would result in younger and lower-achieving students' having fewer opportunities to experience thoughtful classrooms.[12] It is encouraging, however, that levels of classroom thoughtfulness were not highly associated with students' sex, parental education, or minority status.

The regression results in Table 4 provide more information on the relationship between classroom thoughtfulness and student posttest scores. Each analysis offers a different way of examining the issue. Analysis 1 examines the relationship controlling for background variables, but not considering the influence of either type of pretest. Here most of the background variables are associated with posttest performance, but the most powerful ones (considering standardized coefficients) are grade point average, ability level of the class and grade level of the class. Holding background variables constant, classroom thoughtfulness appears to make a difference. The raw regression coefficient indicates that an increase in one point on the thoughtfulness scale would, on average, be associated with a gain of a fifth of

[12]Calling attention to teacher expectations (an unmeasured variable) as a way of explaining these correlations is not meant to dismiss or to underestimate the actual difficulties teachers face in promoting higher order thinking with younger and low achieving students.

a point on the posttest.[13] Whether this is considered "large" or "small" is a matter of interpretation. The total posttest variance explained by these variables is 34%.

Analysis 2 includes two "weak" pretests completed by ninth graders and presents a somewhat different picture. Considering the standardized coefficients, we see that posttest performance is most powerfully related to initial social studies knowledge and to grade point average, but that initial writing ability and classroom thoughtfulness also have influence. In this analysis, perhaps due to controls for pretests, the effects of class ability level, class racial composition, and parents' education are lower than in Model 1, and grade point average also loses some importance. In terms of raw coefficients, a 1 point difference in classroom thoughtfulness is again associated with a fifth of a point on posttest. While total variance explained was less than 30%, the fact that classroom thoughtfulness survived the controls for social background and pretests is a potentially important result.

Analysis 3 offers the most rigorous test of the association of classroom thoughtfulness with posttest, because of the inclusion of the strong pretest. Controlling for the strong pretest, along with the other variables, eliminated the association of classroom thoughtfulness with posttest performance. Instead, the pretest, ability level of the class, grade level of the class, and student grade point average contribute, in roughly equal amounts, virtually all of the predictive power, and this analysis explains more variance (39%) than the first two.

Considering the nature of the posttest and the design of the study, this finding might well be expected. On the other hand, since the first two analyses indicated a connection between classroom thoughtfulness and posttest performance, even after controlling for several

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[13]To compare the magnitude of influence among independent variables measured in different metrics, it is useful to refer to standardized coefficients. To estimate more concretely how a change in a given independent variable might affect a dependent variable, it is useful to refer to raw regression coefficients.

background variables rarely included in analyses of instructional effects, we were reluctant to allow Analysis 3 to terminate the investigation.

Could classroom thoughtfulness affect performance on this exercise in ways other than those tested in the straightforward linear regressions? Is it possible, for example, that gradual increases in thoughtfulness below a certain threshold would make no difference, but that students exposed to the highest levels would perform better? We explored this possibility by dividing the 20 classes that took the strong pretest (Data Set 3) into quintiles based on their class thoughtfulness scores (which ranged from 2.72 to 4.33). We asked whether students in the top fifth of the classes would perform better than those in the lower four fifths. Regression analysis indicated no such result, which sustained the finding of analysis 3: in social studies classes focused neither on persuasive writing nor on constitutional reasoning, general qualities of classroom thoughtfulness had no apparent impact on student persuasive writing on constitutional issues.[14]

VI. Conclusion

This study attacked a perplexing problem. Social studies includes multiple fields of inquiry that have not been organized into a coherent, nationally accepted curriculum. In spite of lack of consensus on a core of essential content, there seems to be much agreement on at least three points: (a) Diversity ought to be preserved; (b) Regardless of what is studied, teachers ought to promote thinking rather than mindless reproduction of knowledge; and (c)

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[14]Regression analysis in Data Set 3 was limited by the number of classes. Although more than 300 students took pre- and post-tests, there were only 20 classes, thus only 20 distinct scores for classroom thoughtfulness, and in the quintile analysis only 4 classroom thoughtfulness scores per quintile. A better design for the study would have included many more classes (e.g. 100) which took the strong pretest. This would allow us to study (through hierarchical linear modeling) the variation in association between classroom thoughtfulness and posttest that might be due to different types of classes while simultaneously analyzing the effects of individual level variables (e.g. social background, gpa, and pretest) on posttest scores.

Students ought to be able to demonstrate competence in analysis and interpretation of social phenomena. Recent national interest in accountability challenges social studies educators to develop common indicators of performance on the last two points: how well teachers teach thinking and how well students learn to think.

This project proposed a conceptualization of higher order thinking and its promotion in the classroom that is applicable to a host of students, teachers, and topics of study. Similarly, it developed an exercise to assess student competence in thinking about important social studies content - constitutional issues. The main empirical problem was, given the diversity in what the observed teachers actually taught, whether the "generic" qualities of classroom thoughtfulness that the project observed would be associated with student performance on the assessment task.

Seventy-three classes in eleven high schools were observed and almost 1400 hundred students were tested. Design variations within the study led to the use of different data sets to estimate the possible impact of classroom thoughtfulness, but all analyses controlled for several background variables at both the individual and class level. Logistical limitations resulted in only 20 of the classes and 340 students taking a pretest that made intellectual demands equivalent to the posttest.

Because our measures of classroom thoughtfulness were not derived from teaching the specific competencies required on the posttest (i.e., understanding of constitutional reasoning and persuasive writing) and because no teachers concentrated instruction in this direction, we did not anticipate finding a strong relationship between the main independent and dependent variables. We chose to investigate this relationship, nevertheless, for at least two reasons.

First, research on the importance of school and classroom culture suggests that student learning is influenced by general qualities of human interaction, not simply by pedagogic moves tied to the teaching of specific content.[15] The observation scheme used here offered an opportunity for quantitative exploration of the relationship between one aspect of classroom culture (thoughtfulness) and student performance that demanded complex thinking in social studies.

Second, the recent concern with national education standards has highlighted political, professional, and technical issues related to the pluralistic nature of social studies instruction. This investigation could contribute new information on the prospects of using a common observation scheme and a common assessment exercise with classes that differ in the subject matter taught.

After controlling for students' sex, race, parents' education, gradepoint average, grade level in school, ability level and racial composition of the class, and pretests of social studies knowledge and writing ability, classroom thoughtfulness was associated with student posttest performance. When student performance on a pretest virtually identical to the postest was taken into account, classroom thoughtfulness had no association with posttest scores on persuasive writing about a constitutional issue. The lack of relationship is consistent with the point we emphasized earlier: that success in meeting of higher order challenges in a specific content area demands in-depth knowledge in the area, not simply general skills and dispositions. The result seems consistent with research on instruction in a variety of subjects. Generic instructional traits are often not associated with complex intellectual performance in

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[15]See Lightfoot (1983), McNeil (1986), Metz (1986), Powell et al (1985), Rutter et al (1979), Sedlak et al (1986).

specific content domains. Instead, "what constitutes effective instruction...varies with context" (Brophy & Good, 1986, p.370).

What are the implications of these findings? There is a great risk that the findings will be misinterpreted as evidence that general qualities of classroom thoughtfulness do not enhance student achievement in social studies, and that, therefore, the dimensions of thoughtfulness we propose should not be pursued in teaching. This interpretation is misguided in several ways. First, because the study examined only a very specialized form of social studies achievement (persuasive writing on constitutional issues), its findings should not be generalized to all forms of social studies achievement. Second, since teachers did not teach the knowledge and skills needed for persuasive writing on constitutional issues, the study offered no evidence on the more appropriate question; namely, whether more and less thoughtful approaches to the teaching of persuasive writing on constitutional issues affects student achievement in this domain. Third, since the study did not assess student achievement in the specific domains that teachers did address, it offered no evidence of the impact of general dimensions of thoughtfulness on the quality of student achievement or on higher order thinking in the topics actually taught. Given the study's silence on each of these important matters, it would be premature to use it as a basis for dismissing the importance of classroom thoughtfulness along the dimensions we proposed.

On a more positive note, recall that in analyses 1 and 2, classroom thoughtfulness was associated with posttest performance after taking into account several important background variables. Although each analysis failed to control for a rigorous pretest, the findings are compatible with the prospect that classroom thoughtfulness would be more highly associated with student performance on a posttest of higher order thinking in the topics actually taught.

To adequately test the influence of classroom thoughtfulness, a study that assesses student higher order thinking in the topics taught is needed.

We hoped that the project would contribute to practice, not simply by offering evidence on empirical questions, but also by developing instruments to assess the thoughtfulness of teaching and the performance of students on tasks that require higher order thinking. Although we identified generic qualities of classroom thoughtfulness that might function as common indicators of teaching related to thinking, we did not develop a generic test for student thinking in social studies. The test of persuasive writing on constitutional issues calls for specialized competence; i.e. jurisprudential reasoning expressed in writing.

In fact, to rely upon a single exercise to measure generic thinking in social studies is probably misguided. Instead, it would seem more prudent for future work on assessment to aim toward a diverse set of tasks. Ideally, these tasks would be sensitive to teachers' diverse content objectives, but they could be scored according to generic qualities, such as depth of understanding or skill in summarizing arguments. While success on the tasks would require domain-specific competence, a set of common scoring criteria would hopefully assess how students use in-depth knowledge, skills, and dispostions to solve the diverse kinds of higher order challenges that can enrich instruction in social studies.

References

Applebee, A. M., Langer, J. A., Mullis, I. V. S., & Jenkins, L. B. (1990). The writing report card, 1984-1988: Findings from the nation's report card. Princeton, NJ: National Assessment of Educational Progress.

Arter, J. & Salmon, J. R. (1987). Assessing higher order skills: A consumer guide. Portland, OR: Northwest Regional Educational Laboratory.

Beyer, B. (1987). Practical strategies for the teaching of thinking. Boston: Allyn & Bacon.

Bransford, J., Sherwood, R., Vye, N., & Rieser, J. (1986). Teaching thinking and problem solving. American Psychologist, 41(10), 1078-1089.

Brophy, J. & Good, T. L. (1986). Teacher behavior and student achievement. In M. C. Wittrock (Ed.), Handbook of research on teaching, 3rd edition. New York: Macmillan.

Cornbleth, C. (1985). Critical thinking and cognitive processes. In W. B. Stanley (Ed.), Review of research in social studies education: 1976-1983. Boulder, CO: ERIC Clearinghouse for Social Studies/Social Science Education.

de Bono, E. (1983). The direct teaching of thinking as a skill. Phi Delta Kappan, 64(10), 703-708.

Dewey, J. (1933). How we think. Boston: D.C. Heath.

Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities. In J. B. Baron and R. J. Sternberg (Eds.), Teaching for thinking. New York: Freeman.

Glaser, R. (1984). Education and thinking: The role of knowledge. American Psychologist, 39, 93-105.

Greeno, J. G. (1989). A perspective on thinking. American Psychologist, 44(2), 134-141.

Herrnstein, R. J., Nickerson, R. S., De Sanchez, M., & Swets, J. A. (1986). Teaching thinking skills. American Psychologist, 41(11), 1279-1289.

King, M. B. (April, 1991). Leadership efforts which facilitate classroom thoughtfulness in social studies. Paper to be presented at annual meeting of the American Educational Research Association, Chicago, IL.

Ladwig, J. G. (April, 1991). Organizational features which promote classroom thoughtfulness in secondary social studies. Paper to be presented at annual meeting of the American Educational Research Association, Chicago, IL.

Lightfoot, S. L., (1983). The good high school. New York: Basic Books, Inc.

Marzano, R. J., Brandt, R. S., Hughes, C. S., Jones, B. F., Presseisen, B. Z., Rankin, S. C. & Suhor, C. (1988). Dimensions of thinking: A framework for curriculum and instruction. Alexandria, VA: Association for Supervision and Curriculum Development.

McCarthy, C. & Schrag, F. (in press). Departmental and principal leadership in promoting higher order thinking. Journal of Curriculum Studies.

McNeil, L. M., (1986). Contradictions of control. New York: Routledge & Kegan Paul, Inc.

McPeck, J. E. (1981). Critical thinking and education. New York: St. Martins.

Metz, M. H., (1986). Different by design. New York: Routledge & Kegan Paul, Inc.

Newmann, F. M. (1990a). Higher order thinking in social studies: A rationale for the assessment of classroom thoughtfulness. Journal of Curriculum Studies, 22(1), 41-56.

Newmann, F. M. (1990b). Qualities of thoughtful social studies classes: An empirical profile. Journal of Curriculum Studies, 22(3), 253-275.

Newmann, F. M. (1990c), A Test of Higher-Order Thinking in Social Studies. Social Education, 54(6), 369-373.

Newmann, F.M. (in press a). The prospects for classroom thoughtfulness in high school social studies. In C. Collins & J.N. Mangieri (Eds.), Building the quality of thinking in and out of our schools in the twenty first century. Hillsdale, NJ: Lawrence Erlbaum Associates.

Newmann, F.M. (in press b). Higher order thinking and prospects for classroom thoughtfulness. In F.M. Newmann (Ed.), Student Engagement and Achievement in American High Schools. New York: Teachers College Press.

Nickerson, R. S. (1988). On improving thinking through instruction. In E. Z. Rothkopf, (Ed.) Review of Research in Education, 15, (pp. 3-57). Washington, DC: American Educational Research Association.

Norris, S. P. (1989). Can we test validly for critical thinking? Educational Researcher, 18(9), 21-26.

Onosko. J. (1989). Comparing teachers' thinking about promoting students' thinking. Theory and Research in Social Education, 17(3), 174-195.

Onosko, J. (1990). Comparing teachers' instruction to promote students' thinking. Journal of Curriculum Studies, 22(X), XXX-XXX.

Onosko, J. (1991). Barriers to the Promotion of Thinking in Social Studies. Paper to be presented at annual meeting of the American Educational Research Association, Chicago, IL.

Perkins, D. N., & Salomon, G. (1989). Are cognitive skills context-bound? Educational Researcher, 18(1), 16-25.

Powell, A. G., Farrar, E. & Cohen, D. K. (1985). The shopping mall high school. Boston: Houghton Mifflin Company.

Rutter, M., Maughan, B., Mortimore, P., & Ouston, J. (1979). Fifteen thousand hours. Cambridge, MA: Harvard University Press.

Schrag, F. (1988). Thinking in school and society. London: Routledge & Kegan Paul.

Schrag, F. (1989). Are there levels of thinking? Teachers College Record, 90(4), 529-533.

Sedlak, M. W., Wheeler, C. W., Pullin, D. C., & Cusick, P. A. (1986). Selling students short. New York: Teachers College Press.

Stevenson, R. B. (in press). Engagement and cognitive challenge in thoughtful social studies classes: A study of student perspectives. Journal of Curriculum Studies, 22(X), XXX-XXX.

Walsh, D., & Paul, R. W. (1987). The goal of critical thinking: From educational ideal to educational reality. Washington, DC: American Federation of Teachers.

Appendix

REASONING ABOUT STUDENT LOCKER SEARCHES

This reading presents a court case involving the search of a student's school locker by a school administrator. Though not an actual case, it is based upon cases presented to the U.S. Supreme Court. You are to be the judge. As you read, be thinking about how you might decide this case.

The case of STATE OF NEW YORK v. KAREN DOCTOR

A teacher at a high school in New York discovered, Karen, a 16 year old sophomore and her friend smoking cigarettes on school grounds in clear violation of a school rule. The teacher took them to the principal's office. Karen denied that she had been smoking, saying that she did not smoke at all. The Assistant Principal, Mr. Hardy, then insisted on seeing the contents of her purse. He found a pack of cigarettes and also a package of rolling papers which are often used to smoke marijuana. He then decided to search Karen's locker.

With Karen present at the search, Mr. Hardy discovered in her locker a small amount of marijuana, a pipe, a note card with a list of students who owed her money, and two letters that indicated she was involved in dealing marijuana. He then contacted the police and delinquency charges were brought against Karen. In court, Karen's lawyer argued that the search of her locker violated her constitutional rights and therefore the evidence found in her locker cannot be used. The case should be dismissed. The attorney representing the school and Mr. Hardy argued that the school had reasonable grounds for searching her purse and her locker and therefore the evidence uncovered can be used in the trial. She should be found guilty.

Background Information

The following information is provided to help you think about the case. Please read carefully. You should use this information in writing your argument.

All citizens have certain rights which are guaranteed in the United States Constitution. The

Fourth Amendment states, "The right of the people to be secure in their persons, papers, and effects, against unreasonable searches and seizures shall not be violated and no warrants issued, but upon probable cause..." In other words, citizens have a right to privacy. Government officials and other authorities such as the police may not search any citizen or their personal possessions without good reason or "probable cause". For example, the police often must present evidence to a judge that something illegal is located in a specific place before they can conduct a search. The judge decides if the evidence is enough to justify the search, and if so, the judge issues a search warrant to the police. A search warrant is a document signed by a judge that gives authority to the police to search a specific place for specific items.

As you consider the case, keep in mind that school officials are viewed by the Courts as a type of government official or authority. They have a responsibility to maintain order so that learning can take place, and a responsibility to protect students from harming themselves or others. This may, at times, involve the search of students, their possessions, and their lockers.

There are several general principles that the U.S. Courts have used to help them decide cases involving the search of students and their possessions. These are called precedents. The following principles or precedents are summarized to help you decide the case of New York v. Karen Doctor.

First, the Courts have developed the principle that school officials serve as representatives of parents during school-related activities, and, in some situations, have the right to act as a student's parent.

Second, the Courts have decided that, unlike the police, school officials can conduct searches without a warrant if they have "reasonable suspicion" to believe something illegal or dangerous is present. However, there must be evidence that something harmful is hidden by a student.

Third, the Courts have decided that the danger of the items for which the search is conducted must be balanced against the student's right to privacy. Therefore, school officials must decide how dangerous the item is before conducting a search. The student's age, history, and school record, and

a teacher's past experience with the student can provide information to decide if there is reasonable suspicion to conduct the search.

Fourth, the Courts assume that student lockers are different from a house, motor vehicle, backpack or even a rented private locker. School lockers are to be viewed as having two owners, the student and the school. Lockers are owned by the school, but are assigned to students for their private use under the condition that dangerous or illegal items are not to be concealed.

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As judge, you are to answer this question:

Did the school violate Karen's constitutional rights by searching her purse and then her locker?

Please write an argument to try to convince someone of your position on this question. In your argument, you should

--State your position on the question,

--Support your position by giving as many reasons as you can, and

--Explain why they are good reasons.

Keep in mind that your position will be most convincing if you include information from the reading and show weaknesses in the opposing position. Good luck!

Table 1.
Initial Criteria for Classroom Thoughtfulness

Classes were rated from 1-5. 1 = "very inaccurate" description of class; 5 = "very accurate."

*1.	In this class, there was sustained examination of a few topics rather than a superficial coverage of many.
*2.	In this class, the lesson displayed substantive coherence and continuity.
*3.	In this class, students were given an appropriate amount of time to think, that is, to prepare responses to questions.
4.	In this class, the teacher carefully considered explanations and reasons for conclusions.
*5.	In this class, the teacher asked challenging questions and/or structured challenging tasks (given the ability level and preparation of the students).
6.	In this class, the teacher pressed individual students to justify or to clarify their assertions in a Socratic manner.
7.	In this class, the teacher tried to get students to generate original and unconventional ideas, explanations, or solutions to problems.
*8.	In this classroom, the teacher was a model of thoughtfulness. (Principal indications are: the teacher showed appreciation for students' ideas and appreciation for alternative approaches or answers if based on sound reasoning; the teacher explained how he (she) thought through a problem, the teacher acknowledged the difficulty of gaining a definitive understanding of the topic.)
9.	In this class, students assumed the roles of questioner and critic.
*10.	In this class, students offered explanations and reasons for their conclusions.
11.	In this class, students generated original and unconventional ideas, explanations, hypotheses or solutions to problems.
12.	In this class, student contributions were articulate, germane to the topic and connected to prior discussion.
13.	What proportion of students were active participants?
14.	What proportion of time did students spend engaged in thoughtful discourse with each other?
15.	What proportion of students showed genuine involvement in the topics discussed? (Cues include raising hands, attentiveness manifested by facial expression and body-language, interruptions motivated by involvement, length of student responses).

*These variables are considered minimal requirements for a thoughtful lesson.

Table 2.
Definition of Variables, Means and Standard Deviations for Each Data Set

	Definition	Data set 1 N=1387 $\bar{X}$	Data set 1 N=1387 SD	Data set 2 N=734 $\bar{X}$	Data set 2 N=734 SD	Data set 3 N=342 $\bar{X}$	Data set 3 N=342 SD
Posttest Constitutional Reasoning	Post-Test. Persuasive writing on Constitutional issue of school locker search, scored 1-5.	2.21	1.01	2.04	.91	2.22	.97
Male	Student sex, measured by male = 1, female = 0.	.48	.48	.47	.50	.53	.45
African American	Student race, self-report, measured by African American = 1, other = 0. In this study, most non-white students were African-American.	.14	.33	.12	.32	.20	.36
Parents Education	Parents' education measured on a five point scale (1 = less than high school graduation, 2 = high school graduation only, ... 5 = graduate or professional degree) and averaged between two parents, student report.	3.03	1.10	3.32	1.04	2.09	.83
Grade Point Average	Student's grade point average measured by the student's self report on an eight-point scale (1 = mostly below D to 8 = mostly A).	5.63	1.58	5.57	1.53	5.80	1.51
Class Level	Mean grade level of students in the class, based on teacher report of percent of students at each level, grades 9-12.	9.72	.96	[1]		10.33	.93
Class Ability	Mean ability of students in the class, based on teacher report of percent of students in the lowest (1), middle (2) and highest (3) thirds of school achievement, 1-3.	2.05	.53	1.99	.50	2.07	.59
Percent African American	Percentage of African American students in the class according to teachers' reports.	17.73	20.17	13.66	13.29	30.73	28.81
Pretest Knowledge	Pre-Test. Social Studies Knowledge, scored 0-79.	[2]		57.46	12.84	[2]	
Pretest Writing	Pre-Test. Writing Ability, scored 0-9.	[2]		5.50	1.35	[2]	
Pretest Constitutional Reasoning	Pre-Test. Persuasive writing on Constitutional Issues of School Censorship, scored 1-5.	[2]		[2]		2.27	.93
Class Thoughtfulness	Classroom Thoughtfulness, mean of six indicators scored 1-5.	3.12	.66	2.83	.56	3.47	.51
Data set 1	All students in the study who took the post-test.						
Data set 2	Ninth grade students in 7 "representative" schools.						
Data set 3	All students in 4 "restructured" schools.						

[1] All students were in the ninth grade.
[2] Test not given to this sample of students.

Table 3.
Correlations Among all Variables (Data set 1, N = 1387)*

	Posttest Constitutional Reasoning	Male	African American	Parents Education	Grade Point Average	Class Level	Class Ability	Percent African American	Pretest Knowledge	Pretest Writing	Pretest Constitutional Reasoning	Class Thoughtfulness
Posttest Constitutional Reasoning	1.00											
Male	-.13	1.00										
African American	-.20	.02	1.00									
Parents Education	.20	-.03	-.12	1.00								
Grade Point Average	.41	-.10	-.14	.20	1.00							
Class Level	.29	-.01	.00	-.11	.09	1.00						
Class Ability	.43	-.09	-.17	.15	.38	.18	1.00					
Percent African American	-.30	.07	.39	-.25	-.19	.00	-.38	1.00				
Pretest Knowledge	.43	.09	-.30	.25	.44		.41	-.35	1.00			
Pretest Writing	.29	-.18	-.08	.19	.26		.24	-.11	.29	1.00		
Pretest Constitutional Reasoning	.43	-.10	-.21	.25	.28	.22	.38	-.30			1.00	
Class Thoughtfulness	.37	-.07	-.10	.06	.24	.49	.38	-.09	.31	.14	.37	1.00

*Correlations for Pretest Knowledge and Pretest Writing based on data set 2, N = 734; all students grade 9. Correlations for Pretest Constitutional Reasoning based on data set 3, N = 342; Pretest Knowledge and Pretest Writing not administered to data set 3.

Table 4
Regression of Posttest of Constitutional Reasoning on Class Thoughtfulness, Background Variables and Pretests

	Analysis Model 1 (Data set 1)			Analysis Model 2 (Data set 2)			Analysis Model 3 (Data set 3)		
	B[1]	Beta[2]	P[3]	B	Beta	P	B	Beta	P
Male	-.14 (.05)[4]	-.06	.00	-.15 (.06)	-.08	.01	-.10 (.09)	-.05	.28
African American	-.18 (.07)	-.06	.01	-.14 (.09)	-.05	.14	.10 (.13)	.04	.43
Parents Education	.09 (.02)	.10	.00	.04 (.03)	.05	.18	-.03 (.05)	-.03	.57
Grade Point Average	.15 (.02)	.23	.00	.09 (.02)	.16	.00	.12 (.03)	.19	.00
Class Level	.19 (.03)	.18	.00				.20 (.05)	.19	.00
Class Ability	.35 (.05)	.18	.00	.11 (.07)	.06	.11	.37 (.09)	.23	.00
Percent African-American	-.00 (.00)	-.11	.00	-.00 (.00)	-.05	.19	-.00 (.00)	-.13	.02
Pretest Knowledge				.02 (.00)	.22	.00			
Pretest Writing				.08 (.02)	.12	.00			
Pretest Constitutional Reasoning							.21 (.05)	.21	.00
Class Thoughtfulness	.20 (.04)	.13	.00	.21 (.06)	.13	.00	.10 (.10)	.05	.28
(Constant)	-1.91 (.26)		.00	-.63 (.25)		.01	-1.90 (.61)		.00
Variance Explained (adjusted R^2)		.34			.28			.39	

[1] B = raw regression coefficient.
[2] Beta = standardized regression coefficient.
[3] P = probability due to chance.
[4] ( ) = standard error